



# Public Service Resilience in a Post-COVID-19 World: Digital Transformation in Nordic Higher Education

*Michael Oduro Asante,  
Sudeepika Wajirakumari Samarathunga Liyanapathiranaige,  
and Rómulo Pinheiro*

## INTRODUCTION

In the wake of the still ongoing COVID-19 health pandemic, public service organisations such as higher education institutions (HEIs) have experienced sudden disruptions in day-to-day service delivery (Crawford et al., 2020; Krishnamurthy, 2020; UNESCO, 2020). With the crises extending beyond an academic year, the global impact on HEIs' continuity and operations cannot be overemphasised. According to various surveys, by

---

M. O. Asante  
University of Bergen, Bergen, Norway  
e-mail: [Michael.Asante@uib.no](mailto:Michael.Asante@uib.no)

S. W. S. Liyanapathiranaige • R. Pinheiro (✉)  
University of Agder, Kristiansand, Norway  
e-mail: [swliya17@student.uia.no](mailto:swliya17@student.uia.no); [romulo.m.pinheiro@uia.no](mailto:romulo.m.pinheiro@uia.no)

© The Author(s) 2023  
R. Pinheiro et al. (eds.), *The Impact of Covid-19 on the Institutional  
Fabric of Higher Education*,  
[https://doi.org/10.1007/978-3-031-26393-4\\_10](https://doi.org/10.1007/978-3-031-26393-4_10)

UNESCO, the Institute of International Education (IIE), International Association of Universities (IAU), the European Association for International Education (EAIE) and the Erasmus Student Network (ESN), the crisis disturbed on-campus academic lectures, imposed new digital infrastructure requirements for teaching and learning, and constrained patterns of student and staff mobility (Crawford et al., 2020; UNESCO, 2020).

Moreover, the crisis has exposed critical loopholes in the adaptive capacities of HEIs and brought to the fore the importance of resilient crisis management policies and mechanisms, particularly relating to digital resources and inclusion (Bartsch et al., 2020; Dewar, 2020). The shortage of vital digital institutional resources in the public sector (equipment, staff, finances, time) (Bartsch et al., 2020) and a general lack of bureaucratic slack (Trinchero et al., 2020) have exacerbated existing challenges. The ongoing crisis seemingly highlights vagaries in sustaining academic excellence and continuity, bringing to the fore discussions about digitalisation and the future of teaching, learning, research and organisational crisis management. HEIs' crisis management agendas (anticipation, coping and adaptation strategies) have been varied and include the shift from traditional face-to-face teaching and classroom examinations to online teaching and learning and assessment, the cancellation of physical events and social (networking) activities, alongside the formation of a "new normality" (Anholon et al., 2020; Tesar, 2020; UNESCO, 2020). Work from home has become the new normal for the majority of academic staff, with most teaching, supervision and research being carried out online or remotely. That said, there are differences in preparedness and capability among HEIs when delivering and sustaining academic excellence and operational continuity.

Starting in the early 2010s, both as a response to broader global developments with respect to digital transformation on the one hand and the rise of mass open online courses (MOOCs) on the other (cf. Laterza et al., 2020), Nordic HEIs began taking initiatives towards building solid technological infrastructures that supported digitalisation across the board. This implies that, compared to other nations or world regions, HEIs in the Nordics were quite advanced in terms of digital policies, infrastructure and resources before the pandemic. This is linked to initiatives by central governments and HEIs across the Nordics to promote digitalisation and

digital competencies throughout the public sector (Haase & Buus, 2020; UFM, 2019). The primary rationale for such endeavours pertains to the need to prepare (‘modernise’) the public sector at large for the opportunities and challenges brought by the rise of the ‘digital society’ where technology is ubiquitous and prevails in all aspects of social and economic life (Dufva & Dufva, 2019).

Hence, these developments make the Nordic region an interesting case study for investigating the effects of COVID-19 on the resilience capacity of HEIs, by focusing on digital transformation, defined as “a process wherein organizations respond to changes taking place in their environment by using digital technologies to alter their value creation processes” (Vial, 2019, p. 119).

The digital teaching and learning adopted by HEIs requires the institutions to acquire new digital tools and platforms (Bartsch et al., 2020), while employees are pushed to develop new digital skills, whether virtual or not, to reconcile professional and personal tasks (Anholon et al., 2020). This means that the degree of HEIs’ digitalisation<sup>1</sup> has become vital and decisive in ensuring academic continuity and administrative services in times of crises. To better understand the differences in the anticipation, coping and adaptation strategies to COVID-19-related protocols (from key stakeholders like governments, WHO and UNESCO), this study seeks to explore the role of digital transformation in shaping HEIs’ public service resilience (hereafter, termed HEI resilience).

Resilience has become a prominent topic within social sciences inquiries, particularly in the last decade (Boin et al., 2010; Kayes, 2015; Duit, 2016). Despite many definitions and epistemological positions (for a recent review, see Pinheiro et al., 2022), there are two fundamental conceptions of the phenomenon. The first, popularised within economics, is associated with the notion of ‘equilibrium’ and pertains to the notion of ‘bouncing back’ to an earlier state of balance following a shock or crisis (Giustiniano et al., 2018). The second, based on systems thinking and complexity science, approaches resilience as the ability to adapt to changing external circumstances whilst maintaining function and identity (Walker & Salt, 2006). Pinheiro et al. (2022) suggest a novel framework for conceiving resilience prior, during and after critical events, which is relevant in the context of the research questions addressed in this study, namely:

- *How did HEIs in the Nordic countries respond to the teaching and learning-related challenges brought about by COVID-19?*
- *What are the implications of digital transformation for the resilient capacity of HEIs?*

## METHOD, DATA SET AND CASES

The primary data derive from semi-structured (Zoom) interviews conducted at three case universities (two in Norway and one in Sweden) during the winter of 2020 and spring of 2021. Using a comparative (multiple) case design, different types of institutions (old research-intensive vs younger, more regionally embedded) were selected to ensure variety. Given the binary nature of HE systems across the Nordic countries, as well as variations in terms of size, age and institutional profile, the sample is representative of the general population. That said, it is important to note that substantial differences exist between HEIs, both within and across the Nordics, and that the qualitative nature of this study restricts its generalisations to the concepts and theories used rather than the general population of Nordic HEIs. As is the case in other parts of the world, Nordic HE systems and institutions have been the target of numerous policy reforms in the last two decades. The primary focus has been on fostering efficiency, quality, accountability and responsiveness. Particular attention has been paid to the implementation of various types of market-based mechanisms aimed at fostering performance management (Pinheiro et al., 2019). These have, inter alia, led to changes in the governance and management structures of HEIs, as well as a reshaping of the domestic HE landscapes through forced and/or voluntary mergers aimed at creating larger and stronger (i.e. more globally competitive) HEIs (Pinheiro et al., 2016). One immediate consequence relates to the gradual move towards a unitary HE model centred on the comprehensive research-based university.

The sample for this study comprised selected senior administrators and academics (using strategic sampling and snowball methods) at the central administration, faculty and departmental levels (N= 30) of the three case universities. These individuals were interviewed with a view to understanding the shared goals, collaborations and responsibilities towards HEIs' resilience capacity in the context of digital transformation. The interview material was recorded and transcribed verbatim. The

data coding was carried out using Nvivo Qualitative Data Analysis Software (version 12), facilitating analysis of emerging themes towards theory development.

## COVID-19 AND HEIS' RESILIENCE APPROACHES

The extant literature indicates that HEIs' responses to the COVID-19 pandemic have been differentiated, ranging from no response to on-campus social isolation strategies to rapid curriculum redevelopment for fully online offerings (Crawford et al., 2020; UNESCO, 2020). While some HEIs have adopted emergency remote teaching as an essential first step on the road to academic continuity, others have closed down entirely and extended their semester break (Crawford et al., 2020). This has been associated with poorly resourced institutions and inadequate preparation for proactive and strategic responses, in addition to resistance to change by some academics. Many HEIs were underprepared for an overnight shift to high-quality online teaching and learning, and this has pushed some scholars to question the resilience of HEIs in terms of structures and resources for handling emerging crisis situations (Crawford et al., 2020; Anholon et al., 2021).

COVID-19 raises salient questions on how HEIs overcome crises, the drivers and factors that enable HEIs to adapt and transcend crises and how HEIs perform in terms of crisis management. Undoubtedly, some HEIs will have organisational continuity and crisis recovery plans in place (Cerullo & Cerullo, 2004). However, unless these plans and strategies can be intuitively tested during crises, the plans will not be effective (McManus et al., 2008). As such, a new proactive and strategic approach to the management of crises is required. COVID-19 has seemingly created a moment to recognise the distance HEIs need to travel to effectively navigate future disruptions. Fortunately, while the journey is not brief, the milestones are coming into view.

Preliminary studies suggest that, in spite of the obvious challenges, on the whole, Nordic HE systems and institutions responded rather adequately to the challenges posed by the COVID-19 pandemic (Solberg et al., 2021; Pinheiro et al., 2022). This was partly a function of the adequate policy response by the respective national and regional (county-level) authorities (Saunes et al., 2021), including the allocation of additional resources for crisis management, high levels of trust between government and the public sector, in addition to a considerable degree of

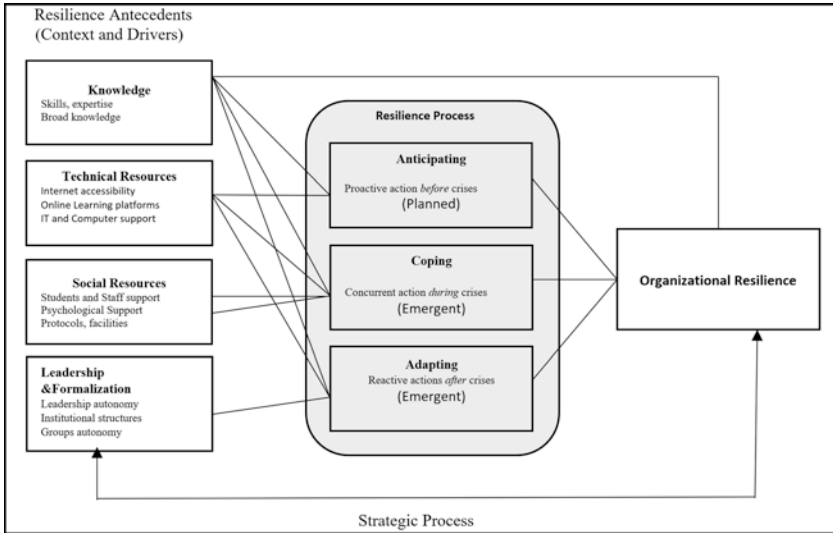
institutional autonomy, both substantive and procedural, enjoyed by public HEIs in the Nordics, when compared to other countries. What is more, studies also show that research universities played a critically important role in providing support to government in terms of crisis management (Gornitzka & Stølen, 2021).

## THEORETICAL BACKDROP AND ANALYTICAL FRAMEWORK

A considerable body of research and theorising has emerged in recent years, highlighting the multidimensional nature of resilience as a process, capability and/or outcome (Pearson & Clair, 1998; James & Wooten, 2005; Boin et al., 2013; Lengnick-Hall & Beck, 2005; Vogus & Sutcliffe, 2007; Lengnick-Hall et al., 2011; Burnard et al., 2018; Duchek, 2020). Frigotto et al. (2022) highlight the complex and dynamic interplay between stability and change whilst unpacking resilience as a social phenomenon. These authors refer to ‘degrees of novelty’ as a means of categorising resilience or adversity triggers or drivers. What is more, like others, they take a process view on resilience stressing the importance of temporal dimensions: before, during and after the occurrence of critical events.

One comprehensive typology for classifying the key drivers and development of resilience within organisations is the *capability-based approach* advanced by Duchek (2020). The latter emphasises that resilience is a highly complex phenomenon deeply embedded in social contexts. This perspective highlights two key elements: *strategic contexts* (knowledge base) and *strategic drivers* (resource availability, social resource and power/responsibility). Following the open systems view on organisations (Scott, 2003), Williams et al. (2017, p. 20) emphasise the dynamic nature of resilience “as an interaction between the organisation and the environment”. Resilience, from this perspective, refers to the capacity to respond to a crisis effectively, not only *after* the crisis (responsive) but also proactively both *before* and while (*during*) it is unfolding (Linnenluecke et al., 2012; Alliger et al., 2015; Frigotto et al., 2022).

Resilience is, thus, composed of stages, with organisations responding to, or anticipating, emerging events through some form of adaptation and learning (Weick et al., 1999; Lengnick-Hall et al., 2011). Strategic views on resilience shed light on organisational (*ex-post*) responses to purposefully cope *during* critical events or crises (Wildavsky, 1991; Weick et al., 1999; Rerup, 2001) while at the same time attempting to anticipate



**Fig. 10.1** The study's analytical framework. (Source: authors' own, following Duchek (2020) and Mintzberg (1985))

future, disruptive events by fostering resilience *ex-ante* (Somers, 2009; Boin & Van Eeten, 2013). Hence, HEIs' resilience is explored in this study as resulting from three interrelated stages or processes: *anticipating*, *coping* and *adapting* (Fig. 10.1). This, in turn, is aligned with Mintzberg's (1985) classic conception of strategic management processes within organisations as either following a planned or *deliberative* (means-ends) approach, in the form of anticipating, versus that of a more *emergent* or organic nature, empirically manifested in the coping and adapting phases.

The analytical framework presented in Fig. 10.1, and adopted in HEIs in this study, characterises resilience along three key stages of the process, each influenced by *four* main drivers or antecedents, described in Table 10.1. It is important to note that these stages are not independent of each other, but overlap and are based on pre- and post-COVID-19<sup>2</sup> (digital) initiatives and developments at the selected case universities (as shown in Table 10.2).

**Table 10.1** Resilience drivers and mechanisms

<i>Drivers or capabilities</i>	<i>Mechanisms</i>
<i>Knowledge</i>	Broad experience of digitalisation A wide variety of skills, competencies and human resources Innovative and enhanced creativity decisions during crises Learning at the different stages of the resilience process
<i>Technical resources</i>	Digital platform that allows for a virtual classroom High-speed Internet connections Digital tools such as computer facilities
<i>Social resources</i>	Financial relief packages for students Students and staff social support-linked digital challenges. Shared goals between central, faculties and the departments Social capital and mutual respect among organisations
<i>Leadership and formalisation</i>	Degree of involvement and empowerment (different levels) Engagement of members for achieving organisational interests Digital empowerment of members of staff Assigning of digital responsibilities

Source: authors' own

**Table 10.2** Summary of key findings

<i>Drivers or capabilities</i>	<i>Pre-COVID-19</i>	<i>Post-COVID-19</i>
<i>Knowledge</i>	<ul style="list-style-type: none"> <li>• Broad experience of digitalisation</li> <li>• Wide variety of skills and human resources</li> <li>• Digital training and seminars</li> </ul>	<ul style="list-style-type: none"> <li>• Digital committees and groups</li> <li>• Enhanced digital training and seminars for staff</li> <li>• Innovative and enhanced creativity decisions during crises</li> <li>• Policy collaboration with government, stakeholders and other institutions</li> </ul>
<i>Technical resources</i>	<ul style="list-style-type: none"> <li>• Online learning platforms</li> <li>• Video recording of classroom sections</li> </ul>	<ul style="list-style-type: none"> <li>• Surge in acquisition of digital tools and infrastructure</li> <li>• Provision of digital Incentives</li> </ul>
<i>Social resources</i>	<ul style="list-style-type: none"> <li>• Social and technical support</li> </ul>	<ul style="list-style-type: none"> <li>• Social media group page</li> <li>• Regular digital meetings</li> <li>• Enhanced social and technical support</li> </ul>
<i>Leadership and formalisation</i>	<ul style="list-style-type: none"> <li>• A minimal degree of faculty involvement and empowerment at the sub-unit level</li> </ul>	<ul style="list-style-type: none"> <li>• Improved leadership support</li> <li>• Increased collaborations and involvement of different departments and faculty leadership</li> <li>• Digital empowerment of members of staff</li> <li>• Assigning of digital responsibilities</li> </ul>



## RESILIENCE IN ACTION

The data suggest that in the case of both individual academics and HEIs, the understanding of resilience and the activities it entails has changed following the pandemic. One of the key transformations pertains to HEIs' resilience capacity in terms of knowledge capabilities (KC), the first resilience driver described in Table 1. Prior to COVID-19, KC was just another element to consider; it has now (post-COVID-19) become a critical endogenous factor at all the case HEIs. This is manifested empirically through the formation of digital committees and task groups, enhanced digital training and seminars for academic staff, innovative solutions and multiple collaborations with governmental stakeholders and other HEIs nationally and internationally. Comments from some respondents illustrate how KC has become an important aspect of the universities' programmes and activities in the post-COVID era.

*What can the university do from a central (administration) standpoint to facilitate that (digital transformation within teaching) for the teachers? And that is something going on right now. The Vice-Chancellor has put together a group of academic leaders, who are right now working on a plan, post-COVID. That will be very much about how we will utilize digital tools in both teaching and research. (ICT administrator, central administration, Swedish case; LA2)*

*[...] we have identified one resource person at each department, and they took very much... they managed to collect colleagues to help them, so I would say two things. We have the zoom system, we had the canvas system for students, and we had some people that used much of their own time to help their colleagues. So both system and good people (as key factors). (Senior administrator, faculty level, Swedish case; LF2)*

*We (central administration) have a huge responsibility with respect to education. Also, we have a separate unit at the university that is the Learning Lab. That's a cooperation between the student administration division, the communication division, the IT division and also the people from the university as a pedagogic department people working on how to do teaching. That group was extremely important with respect to the (digital) transformation in education. (ICT administrator, central administration; Norwegian case 2; BA2)*

Regarding *technical resources*, the data for the three cases show that this critical element has been enhanced following the pandemic. In the past, it

was not mandatory, and teachers were not forced to use digital platforms, record videos or resort to virtual teaching. Such aspects have now become embedded (institutionalised) into the day-to-day roles, functions and teaching/learning activities of HEIs and their respective academic groups across multiple disciplines. The respondents generally agreed that the IT department played a vital role in providing the technical support essential for ensuring online teaching and other online academic activities. According to these respondents

*I guess if I am going to be successful in digitalization throughout our institution, someone has to push, and it has to be sort of from the central administration [...] Actually, we have some sort of intensive courses to improve their digital skills, a lot of (academic) staff need training. They need access to proper tools that actually can improve teaching. [...] We need to have the support on how to use them, and that will be a part of some of the central administration, like we have UiA-PULLS (internal pedagogical training uni) where there are digital pedagogy courses, guides on how to use things. They will be a kind of help to share next practice, we need to push it. (Senior academic administrator, central administration, Norwegian case 1; AA1)*

*The IT-personnel are very important in the process [...] And they can stimulate the teachers to see how well the digital tools can work. (Senior academic administrator, central administration, Swedish case; LA1)*

*We (IT dep.) are providing all the systems. We are providing process analysis and people that can work on improving processes, and we are also providing all project management or at least we are responsible for the project management, methodology and also has approved project managers. With respect to the digitalization on the rest of the university, we are playing a key role, and we are responsible for all the IT parts, sort of. (ICT administrator, central administration, Norwegian case 2; BA2)*

With regard to *social resources*, a shift has occurred from traditional social and technical support, like ICT, towards a more systemic or holistic digital architecture composed of a larger and active social media (online) presence and enhanced social (for off-campus students) and technical support (for academic staff around new technologies). On the administrative front, shorter and more regular digital meetings involving staff members have become the norm for fostering academic-administrative collaboration. Respondents at both the central administration and faculty level

argued that internal collaborations, both horizontally (amongst sub-units) and vertically (central administration and sub-units), have been enhanced through regular meetings.

*In fact, we (administration) are better now in having meetings more frequently, and we have also established a new permanent meeting where I collect the different specialists within the faculty administration for every fourth night and it was due to the corona situation when we were working at home, so it might be possible that it is much of the same across the academic world that they find each other and use new meetings to meet more frequently.* (Senior administrator, faculty level, Norwegian case 1; AF1)

*Several faculties already have experience in running online studies at bachelors and masters level and within the social sciences. And some faculties have very little experience in doing that. So, it depends on the subject you are teaching on.* (Former senior academic administrator, central administration, Norwegian case 1; AF3)

*And over the summer (of 2020), we also established a function of streaming, as well as recording in over 100 teaching rooms, so that we could facilitate the risk students in the risk groups that they could follow teaching in a physical setting. So that would be the only aspect that I think we are now initiating an evaluation around, to see how functional that system is.* (Senior academic administrator, central administration, Norwegian case 2; BA1)

From a resilience perspective, the process of more intense and regular information sharing has led to the development of new channels for communication and decision-making, as well as the fostering of trust and common understanding at the case HEIs. These aspects are likely to play an important role whilst dealing with processes of adaptation in the long run, particularly when these will result in internal resistance to change and the need for reaching a workable and democratic compromise. Social resources through traditional social and technical support were found to be prominent at the departmental level, which was acknowledged by many interviewees across the three cases.

*We have all these helplines. If you have a question, call uni-help. But at the end of the day, people will try to call other people. It's naive to think that this will never happen if you only have helplines they can call. That seems nice, but you should be available.* (IT administrator, faculty level, Norwegian case 1; AD3)

*We (university) have had a team of administrative people at the faculty, and I can call them during the lecture and they can go into my zoom room and in my canvas and look at stuff, and that has worked well for us (teachers). (Academic, dep./programme level, Swedish case; LD3)*

*We (university) have a department for higher educational development. There is always someone to talk to, and so the support (to teachers) has been fantastic. (Academic, dep./programme level, Swedish case; LD1)*

When it comes to *leadership* and *formalisation*, the data show that there has been a substantive shift from a minimal degree of engagement before the crisis towards a much stronger and active involvement of academic and administrative leaders alongside the empowerment of academic members across the board. Most notably, both academics and administrators have been greatly empowered through enhanced digital literacy in and outside the (online) classroom. Respondents across the three case HEIs (and at different hierarchical levels) generally acknowledged that leadership across the different levels of the university played a vital role in both coping with and adapting to the challenges brought by COVID-19.

*We have had these weekly meetings in our faculty, I think we called it some digital workshops or something, where we shared different ways of how we do things. And what they learned there was to have a very well-structured Canvas room. (Academic, dep./programme level, Norwegian case 1; AD4)*

*[...] the Vice Chancellor has put together a group of academic leaders, who are right now working on a plan, post-COVID. That will be very much about how we will utilize digital tools in both teaching and research. (ICT administrator, central administration, Swedish case; LA2)*

*They (central education division) can give us courses that you attend, then you get some kind of suggestions and how you can design it to fit and so on. (Academic, dep./programme level, Swedish case; LD2)*

*We've had an incredible amount of producing of resources and training opportunities; webinars and presentations on how to teach better online and how to teach better in a blended environment or in a flipped classroom environment. We've done an enormous amount of work on that. And in the statistics, it basically saying that anybody's changed that they are just using zoom to teach the same way they always did. Or there you got video, no talk, that was a homemade system. (Academic, dep./programme level, Norwegian case 2; BD1)*

*I think it benefits actually from the COVID situation that we've had is that the interaction and communication with and between the different units, and on my part with all the deans and the vice deans of education, the administrative heads for education, have been much more systematic [...] So, I think the communication with the institution has been very frequent, much more frequent than we would on a normal basis, and that has helped us very much in becoming aware of issues that needs to be addressed; needs to be improved, needs to be changed, but also to get the information out and to stimulate the teachers to use the different opportunities and of courses and trainings, etc. (Senior academic administrator, central administration, Norwegian case 2 BA1)*

Finally, as for the importance attributed to *endogenous and exogenous factors* in fostering HEIs' resilience, the data suggest that resilience in terms of digital infrastructure and inclusion for crisis management will largely depend on both HEIs' internal structures and actions (endogenous factors) and external developments (exogenous factors). Regarding endogenous factors identified at this preliminary stage of the research process, these include, but are not limited to: HEIs' leadership role relating to digital initiatives, policies and collaborations before and after the COVID-19 outbreak; levels of digital competence training and skills developments across the board; the availability of digital resources and infrastructures; and effective collaborations and negotiations with external stakeholders, including other HEIs.

In the periods following the pandemic, several successful digital initiatives were taken at the different levels of the universities. A large number of digital tools, platforms and communication equipment were developed. The university actors in the central administration, faculty and departments provided academics and other staff the opportunity to explore their teaching and other related responsibilities. These digital tools, including computers, video-making equipment, laptops and mobile phones, as well as other platforms such as learning management and digital exam systems, alongside Zoom software, increasingly became an essential part of teaching and learning and, thus, an important factor in universities' coping with, and adaptation to, the emerging crisis.

*They (teachers) are now using new tools in that we have very big video production now and when videos are made they are made a lot shorter than before, under 7 minutes preferably, more to the point and oriented more towards cer-*

*tain areas of the content that can be difficult, or some triggering things, and it's easy to create pages within canvas and embed those videos, and that's what many teachers do now. We (administration) have told them (teachers) before that you should do modules in Canvas (learning management system) (IT administrator, central administration, Norwegian case 1; AA2)*

*Steps that we took as an IT department, we had to do something with scaling. So, we had to move systems around because we had 4000 employees working from home. And instead of working in offices, so we had to shuffle around, switch on hardware systems, just to have enough power, programmes and some key components as well as some payables that had to be reconfigured, just to be able to handle the amount data. But all that was done within a couple of days or with a week. So, we had these emergency organization that was established when COVID came in. At the IT department, we were back to normal within a week or two. We had something that we needed to rebuild. That was the VPN (Virtual Private Network), we had to rebuild, because the solution that we had was not possible to scale up to the level we wanted [...] So, it was big! (IT administrator, central administration, Norwegian case 2; BA2)*

In terms of exogenous factors, two main themes have emerged from the data: stakeholder support (private and the state) and governments' digital policies and incentives. The universities' policy collaboration with government and stakeholders and increased funding for their digital projects while following pandemic protocols contributed to the universities' ability to adapt and cope with the enormous teaching challenges that came with the pandemic. With more funding and support, the institutions could acquire the needed digital tools and equipment to ensure teaching and learning during the COVID-19 lockdown.

*One thing that came up is that we are now sharing data between institutions. Maybe we also should share some teaching that we are not everyone is doing exactly the same at every institution. We already have the unit which is sort of a provider of tools to every higher education usually in Norway. So, we already have some sort of collaboration there. But again, it's about the best practice things. (Senior academic administrator, central administration, Norwegian case 1; AA1)*

*My colleagues ... have been a part of a national expert's group. I think they had meetings with the people writing the [government's] digitalization strategy*

*and also with the IT director [...] So, we are actively participating in the shaping of it. So, I guess that could be one of the drawbacks. If this digitalization strategy is formed by who's more attractive or not. The more you put in, the more chance you have of getting out (what you wish) (IT administrator, faculty level, Norwegian case 1; AD3)*

## DISCUSSION AND CONCLUSION

The environment in which Nordic HEIs operate has been changing rather dramatically in the last decade or so, both due to changes at the system level (e.g. competition and demography) as well as a result of government-mandated reforms such as mergers and changes in the legal framework (cf. Pinheiro et al., 2019). Seen as a rather disruptive external shock to the system (Boin & Lodge, 2016), COVID-19, and the subsequent crisis that ensued, exacerbated several ongoing trends, such as blended learning, the adoption of sophisticated technological platforms for managing teaching and learning (e.g. Canvas) and reskilling of academic staff aligned with digital pedagogies and literacy.

As suggested above, the case HEIs, as well as the various actors and academic communities within them, have responded differently to the challenges posed by COVID-19. In some cases, those already acquainted with digital pedagogies and technologies—that is, digital literacy—reinforced their efforts and migrated smoothly to a ‘new normal’ primarily composed of online-mediated teaching and supervision (NIFU, 2021; UKÅ, 2021). In numerous situations, support staff with the necessary skills and competencies aided the departments with the digital transitions.

From the perspective of classic theories on organisations, the central administration of the case HEIs played important roles in the resilience process by acting as key ‘finders of (digital) strategy’ (Mintzberg, 1994), both before and during COVID-19. The supporting staff worked in established committees involving the various faculties and departments to provide strategic input, analyse emerging challenges and facilitate digital training at the different levels of the case HEIs. The roles of the supporting staff could be linked to Mintzberg’s (1994) second role of planners, namely that of ‘analysts’. The central administration of the HEIs has their fingers on the different projects and programmes of the organisation and its external context through their privileged access to policies, soft data and funding decisions of digital programmes. However, they lack the time and the inclination to study the hard data. The supporting staff at the

different levels of the HEIs, then, became the obvious candidates for this task by considering the hard facts in terms of the crises on an ad-hoc basis and by ensuring that the consequences of their analysis were taken into account in the digital strategy-making process (Mintzberg, 1994, p. 26). This process, according to Mintzberg (1994), pertains to ‘strategic analysis’.

It is worth noting that the rise of strategic considerations around different aspects of digital literacy within the case HEIs has turned into a major resource for both staff sociability and power relations<sup>3</sup> in the context of the redistribution of resource pools (people and funding) and the ability (authority) to influence individual and collective behaviours (Clegg, 2013). In this respect, it is interesting to note how certain key agents, like ICT specialists, took a rather salient role during the phase of digital migration (teaching) when compared to pedagogical staff with key competencies in the realm of digital literacy.

From a resilience perspective, at least as far as the midterm is concerned, the cross-case data suggest that knowledge-based and social-based resources and capabilities, combined with effective leadership and decision-making procedures, play a critical role in fostering adaptability to the new, emerging circumstances. These findings are aligned with recent studies, suggesting the importance of core competencies and organisational efficiency in strategically responding to unforeseen events (Pinheiro et al., 2022). In addition, it points to the importance associated with organisational learning as manifested in the simultaneous involvement by key organisational actors in efforts aimed at exploiting existing assets and capabilities alongside those geared towards exploring new ones (March, 1991, 2008).

Moreover, those HEIs that already had such systems, partly or fully, in place benefitted from foresight, being faster at adapting. These findings are aligned with both the resilience and crisis management literature (as sketched out in the theoretical section), suggesting the importance of a systemic approach, with actors within organisations taking proactive steps at different stages of the process before, during and after the ensuing critical momentum or turning point (Somers, 2009; Ferreira et al., 2011; Teixeira & Werther Jr, 2013). This does not mean that resilient HEIs can prevent or anticipate every crisis. However, some organisations are able to detect (through foresight) the unexpected faster than others and are able to immediately react to it, while others “wait and see” (Duchek, 2020).



Internal capabilities like knowledge and technical and social resources as well as leadership structures play a key role in this respect, alongside key organisational attributes such as organisational slack, loose-coupling, prerequisite variety as well as the willingness to experiment and tolerate failure, as identified in recent studies of HEIs (Pinheiro & Young, 2017; Young & Pinheiro, 2022).

Following the notion that, as organisations, HEIs are open systems susceptible to environmental influences (Scott, 2003), the data suggest the importance of the dynamic interplay between endogenous and exogenous factors in coping with surprising or novel situations (Pinheiro et al., 2022), alongside the ability to adapt to changing circumstances in the context of an increasingly turbulent environment (Ansell et al., 2017; Trondal et al., 2022). In so doing, the combination of planned and emerging strategic processes (Mintzberg & Waters, 1985) is thought to be critical to realise desirable resilient outcomes.

All in all, the study lends support to the notion that, at their core, and given the current circumstances in terms of key endogenous (e.g. capabilities and resources) and exogenous (e.g. legitimacy and social context) factors, HEIs are highly resilient organisations with the ability to adapt to changing circumstances whilst retaining both function and identity (Pinheiro & Young, 2017; Young & Pinheiro, 2022; Geschwind et al., 2022). What is more, HEIs' ability to respond to emerging circumstances is, in large part, a function of the ways in which the broader social and governance systems in which they are embedded in or nested (Pekkola et al., 2021) can respond, robustly, to a rise in environmental turbulence as is the case of the effects accrued to COVID-19 (Room, 2011; Ansell et al., 2020). In this respect, the Nordic countries may provide an important comparative template for other nations given their early commitment to fostering innovation across the public sector at large, including being early adopters of digital solutions in the realms of teaching and learning. That said, given that our study did not include cases from outside the Nordics, it is difficult to specify in more detail what specific Nordic-related elements accounted for the observed trends, despite the importance attributed to factors like knowledge and learning, policy frameworks, sustained investments in digital platforms and literacy alongside leadership processes (top down and bottom up) across the board.

Future studies, both across and beyond the Nordic region, and preferably using a longitudinal and mixed-method design, could further illuminate the extent to which (how and under what circumstances) HEIs'

abilities to adapt to a post-COVID-19 environment enhance their resilience capabilities in the long run. Such studies should also adopt a more systemic perspective by considering the co-evolution amongst the macro, social and technical systems, including governance ones, underpinning the daily functioning of contemporary HEIs and the HE systems (nationally and globally), which they are embedded in.

**Acknowledgement** The authors would like to thank the book editors, Prof. Simon Schwartzman (Brazil) and participants at a workshop on digital transformation of higher education hosted by the University of Agder (spring 2021) for insightful comments on earlier versions of the text. Any remaining errors are our own.

## NOTES

1. Digitalisation and digital transformation are used interchangeably in this chapter.
2. Given that COVID-19 is still ongoing at the time of data collection as well as writing, we refer to post-COVID-19 as per the situation following the first general lockdown, in March 2020. In this respect, we do not differentiate here between first and second or following lockdowns, as these have occurred at different stages. It suffices to state that the data was collected between the first and second waves in most Nordic countries as described in detail in the method section.
3. We thank one of the reviewers for pointing out this critical aspect emerging from the data.

## REFERENCES

- Alliger, G. M., Cerasoli, C. P., Tannenbaum, S. I., & Vessey, W. B. (2015). Team resilience: How teams flourish under pressure. *Organizational Dynamics*, 44(3), 176–184.
- Anholon, R., Serafim, M. P., Lourenzani, W. L., Silva, I. B., & Rampasso, I. S. (2020). Leadership in Brazilian public universities: initiatives conducted by three state universities of São Paulo in the context of COVID-19 pandemic. *International Journal of Public Leadership*, 17(1), 13–18.
- Anholon, R., Silva, D., Pinto, J. S., Rampasso, I. S., Domingos, M. L., & Dias, J. H. (2021). COVID-19 and the administrative concepts neglected: reflections for leaders to enhance organizational development. *Kybernetes*, 50(5), 1654–1660.
- Ansell, C., Sørensen, E., & Torfing, J. (2020). The COVID-19 pandemic as a game changer for public administration and leadership? The need for robust

- governance responses to turbulent problems. *Public Management Review*, 23(7), 949–960.
- Ansell, C. K., Trondal, J., & Øgård, M. (2017). *Governance in turbulent times*. Oxford University Press.
- Bartsch, S., Weber, E., Buttgen, M., & Huber, A. (2020). Leadership matters in crisis-induced digital transformation: How to lead service employees effectively during the COVID-19 pandemic. *Journal of Service Management*, 32(1), 71–85.
- Boin, A., Comfort, L. K., & Demchak, C. C. (2010). The rise of resilience. In L. Comfort, A. Boin, & C. Demchak (Eds.), *Designing resilience: Preparing for extreme events* (pp. 1–12). University of Pittsburgh Press.
- Boin, A., Kuipers, S., & Overdijk, W. (2013). Leadership in times of crisis: A framework for assessment. *International Review of Public Administration*, 18(1), 79–91.
- Boin, A., & Lodge, M. (2016). Designing resilient institutions for transboundary crisis management: A time for public administration. *Public Administration*, 94(2), 289–298.
- Boin, A., & Van Eeten, M. J. (2013). The resilient organization. *Public Management Review*, 15(3), 429–445.
- Bolden, R., & O'Regan, N. (2016). Digital disruption and the future of leadership: an interview with Rick Haythornthwaite, chairman of centrica and MasterCard. *Journal of Management Inquiry*, 25(4), 438–446.
- Burnard, K., Bhamra, R., & Tsinopoulos, C. (2018). Building organizational resilience: four configurations. *IEEE transactions on engineering management*, 65(3), 351–362.
- Cerullo, V., & Cerullo, M. J. (2004). Business continuity planning: a comprehensive approach. *Information systems management*, 21(3), 70–78.
- Clegg, S. (2013). *Power, Rule and Domination (RLE: Organizations): A Critical and Empirical Understanding of Power in Sociological Theory and Organizational Life*. Routledge.
- Crawford, J., Butler-Henderson, K., Rudolph, J., Malkawi, B., Glowatz, M., Burton, R., et al. (2020). COVID-19: 20 countries' higher education intra-period digital pedagogy responses. *Journal of Applied Learning & Teaching*, 3(1), 1–20.
- Dewar, J. (2020). The role of universities in times of crisis: a vice-chancellor's perspective. *Qualitative Research Journal*, 20(4), 405–410.
- Duchek, S. (2020). Organisational resilience: a capability-based conceptualisation. *Business Research*, 13(1), 215–246.
- Dufva, T., & Dufva, M. (2019). Grasping the future of the digital society. *Futures*, 107, 17–28.
- Duit, A. (2016). Resilience thinking: Lessons for public administration. *Public administration*, 94(2), 364–380.

- Ferreira, P., Wilson, J., Ryan, B., & Sharples, S. (2011). Measuring resilience in the planning of rail engineering work. In E. Hollnagel & Paric's, J., Woods, D., & and Wreathall, J. (Eds.), *Resilience engineering in practice: A guidebook* (pp. 45–156). Ashgate.
- Frigotto, L., Young, M., & Pinheiro, R. (2022). Resilience in Organizations and Societies: The State of the Art and Three Organizing Principles for Moving Forward. In R. Pinheiro, L. Frigotto, & M. Young (Eds.), *Towards Resilient Organizations and Societies: A Cross-Sectoral and Multi-Disciplinary Perspective* (pp. 3–45). Palgrave.
- Geschwind, L., Pinheiro, R., & Stensaker, B. (2022). Organizational persistence in highly institutionalized environments: Unpacking the relation between identity and resilience. In R. Pinheiro, L. Frigotto, & M. Young (Eds.), *Towards Resilient Organizations and Societies: A Cross-Sectoral and Multi-Disciplinary Perspective* (pp. 201–228). Palgrave.
- Giustiniano, L., Clegg, S. R., e Cunha, M. P., & Rego, A. (2018). *Elgar introduction to theories of organisational resilience*. Edward Elgar Publishing.
- Gornitzka, Å., & Stølen, S. (2021). University challenge: The role of research-intensive universities in crisis management. In S. Bergan, T. Gallagher, I. Harkavy, R. Munck, & van't Land, H. (Eds.), *Higher education's response to the Covid-19 pandemic: Building a more sustainable and democratic future* (pp. 107–114). Council of Europe Higher Education Series No. 25). Council of Europe.
- Haase, S., & Buus, L. (2020). Translating government digitalisation policy in higher education institutions: the Danish case. *Nordic journal of digital literacy*, 15(04), 246–258.
- James, E. H., & Wooten, L. P. (2005). Leadership as (Un) usual: how to display competence in times of crisis. *Organizational Dynamics*, 34(2), 141–152.
- Kayes, D. C. (2015). *Organisational Resilience: How Learning Sustains Organisations in Crisis, Disaster, and Breakdown*. Oxford University Press.
- Krishnamurthy, S. (2020). The future of business education: a commentary in the shadow of the Covid-19 pandemic. *Journal of Business Research*, 117, 1–5.
- Laterza, V., Tømte, C. E., & Pinheiro, R. (2020). Digital transformations with “Nordic characteristics”? Latest trends in the digitalisation of teaching and learning in Nordic higher education. *Nordic Journal of Digital Literacy*, 15(4), 225–233.
- Lengnick-Hall, C. A., & Beck, T. E. (2005). Adaptive fit versus robust transformation: How organisations respond to environmental change. *Journal of Management*, 31(5), 738–757.
- Lengnick-Hall, C. A., Beck, T. E., & Lengnick-Hall, M. L. (2011). Developing a capacity for organizational resilience through strategic human resource management. *Human resource management review*, 21(3), 243–255.

- Linnenluecke, M. K., Griffiths, A., & Winn, M. (2012). Extreme weather events and the critical importance of anticipatory adaptation and organizational resilience in responding to impacts. *Business strategy and the Environment*, 21(1), 17–32.
- March, J. G. (1991). Exploration and exploitation in organizational learning. *Organization science*, 2(1), 71–87.
- March, J. G. (2008). *Explorations in organizations*. Stanford University Press.
- McManus, S., Seville, E., Vargo, J., & Brunson, D. (2008). Facilitated process for improving organizational resilience. *Natural hazards review*, 9(2), 81–90.
- Mintzberg, H. (1985). The organization as political arena. *Journal of management studies*, 22(2), 133–154.
- Mintzberg, H. (1994). Rethinking strategic planning part II: New roles for planners. *Long Range Planning*, 27(3), 22–30.
- Mintzberg, H., & Waters, J. A. (1985). Of strategies, deliberate and emergent. *Strategic management journal*, 6(3), 257–272.
- NIFU. (2021). *Et akademisk annerledesår: Konsekvenser og håndtering av koronapandemien ved norske universiteter og høyskoler [An academically different year: Consequences and management of the corona pandemic at Norwegian universities and colleges]*. NIFU. <https://www.nifu.no/publications/1903811/>
- Pearson, C. M., & Clair, J. A. (1998). Reframing crisis management. *Academy of management review*, 23(1), 59–76.
- Pekkola, E., Pinheiro, R., Geschwind, L., Siekkinen, T., Carvalho, T., & Pulkkinen, K. (2021). Nested hybridity and value definition in public higher education. In J. Vakkuri & J.-E. Johanson (Eds.), *Hybrid Governance, Organisations and Society: Value Creation Perspectives* (pp. 59–80). Routledge.
- Pinheiro, R., Frigotto, M., & Young, M. (2022). *Towards Resilient Organizations and Societies: A Cross-Sectoral and Multi-Disciplinary Perspective*. Palgrave.
- Pinheiro, R., Geschwind, L., & Aarrevaara, T. (Eds.). (2016). *Mergers in Higher Education: The experience from Northern Europe* (Vol. 46). Springer.
- Pinheiro, R., Geschwind, L., Foss Hansen, H., & Pulkkinen, K. (2019). *Reforms, organizational change and performance in higher education: A comparative account from the Nordic countries*. Springer Nature.
- Pinheiro, R., Laterza, V., Tømte, C. E., & Assante, M. (2022). Digital Transformation in Higher Education Before and Following COVID-19: A Scandinavian Tale. In L. Leisyte, J. Dec, & B. van der Meulen (Eds.), *Research Handbook on the Transformation of Higher Education*. Edward Elgar.
- Pinheiro, R., & Young, M. (2017). The university as an adaptive resilient organization: A complex systems perspective. In J. Huisman & M. Tight (Eds.), *Theory and method in higher education research* (pp. 119–136). Bingley.
- Rerup, C. (2001). “Houston, we have a problem”: Anticipation and improvisation as sources of organizational resilience. *Comportamento Organizacional e Gestão*, 7(1), 27–44.

- Room, G. (2011). *Complexity, Institutions and Public Policy: Agile Decision-making in a Turbulent World*. Edward Elgar.
- Saunes, I. S., Vrangbæk, K., Byrkjeflot, H., Jervelund, S. S., Birk, H. O., Tynkkynen, L.-K., Keskimäki, I., Sigurgeirsdóttir, S., Janlöv, N., Ramsberg, J., Ramsberg, J. (2021). Nordic responses to Covid-19: Governance and policy measures in the early phases of the pandemic. *Health Policy*, 126(5), 418–426.
- Scott, W. R. (2003). *Organizations: rational, natural, and open systems*. Prentice Hall.
- Solberg, E., Hovdhaugen, E., Gulbrandsen, M., Scordato, L., Svartefoss, S., & Eide, T. (2021). *Et akademisk annerledesår: Konsekvenser og håndtering av koronapandemien ved norske universiteter og høyskoler [Consequences and management of the corona pandemic at Norwegian universities and colleges]*. Rapport 2021:9. NIFU.
- Somers, S. (2009). Measuring resilience potential: An adaptive strategy for organizational crisis planning. *Journal of Contingencies and Crisis Management*, 17(1), 12–23.
- Swedish Higher Education Authority (UKÄ). (2021). The *Swedish Higher Education Authority's Pandemic Assignment (51-00435-20)*. <https://english.uka.se/about-us/publications/reports-guidelines/reports-guidelines/2021-04-13-the-swedish-higher-education-authoritys-pandemic-assignment---interim-report-1.html>
- Teixeira, E. D. O., & Werther, W. B., Jr. (2013). Resilience: Continuous renewal of competitive advantages. *Business Horizons*, 56(3), 333–342.
- Tesar, M. (2020). Towards a Post-Covid-19 'New Normality?': Physical and Social Distancing, the Move to Online and Higher Education. *Policy Futures in Education*, 18(5), 556–559.
- Trincherò, E., Kominis, G., Dudau, A., & Corduneanu, R. (2020). With a little help from my friends: the positive contribution of teamwork to safety behaviour in public hospitals. *Public Management Review*, 22(1), 141–160.
- Trondal, J., Keast, R., Noble, D., & Pinheiro, R. (2022). *Governing Complexity in Times of Turbulence*. Edward Elgar.
- UFM. (2019). *Digitale kompetencer og digital læring National handlingsplan for de videregående uddannelser. Uddannelses- og forskningsministeriet [Digital competencies and digital learning National action plan for higher education. Ministry of Education and Research]*. <https://ufm.dk/publikationer/2019/filer/digitale-kompetencer-og-digital-laering.pdf>
- UNESCO. (2020). *Covid-19 educational disruption and response*. UNESCO.
- Vial, G. (2019). Understanding digital transformation: A review and a research agenda. *The journal of strategic information systems*, 28(2), 118–144.
- Vogus, T. J., & Sutcliffe, K. M. (2007). *Organisational resilience: towards a theory and research agenda*. IEEE International Conference on Systems, Man and Cybernetics, IEEE.

- Walker, B., & Salt, D. (2006). *Resilience Thinking: Sustaining Ecosystems and People in a Changing World*. Island Press.
- Weick, K. E., Sutcliffe, K. M., & Obstfeld, D. (1999). *Organizing for high reliability: processes of collective mindfulness*, *Research in organizational behaviour*. Elsevier.
- Wildavsky, A. (1991). What other theory would be expected to answer such profound questions? A reply to Per Selle's critique of cultural theory. *Scandinavian Political Studies*, 14(4), 355–360.
- Williams, T. A., Gruber, D. A., Sutcliffe, K. M., Shepherd, D. A., & Zhao, E. Y. (2017). Organizational response to adversity: Fusing crisis management and resilience research streams. *Academy of Management Annals*, 11(2), 733–769.
- Young, M., & Pinheiro, R. (2022). The Post-Entrepreneurial University: The case for resilience in higher education. In R. Pinheiro, L. Frigotto, & M. Young (Eds.), *Towards Resilient Organizations and Societies: A Cross-Sectoral and Multi-Disciplinary Perspective* (pp. 179–200). Palgrave.

**Open Access** This chapter is licensed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

